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# SCIENCE

A WEEKLY JOURNAL DEVOTED TO THE ADVANCEMENT OF SCIENCE, PUBLISHING THE  
OFFICIAL NOTICES AND PROCEEDINGS OF THE AMERICAN ASSOCIATION  
FOR THE ADVANCEMENT OF SCIENCE

FRIDAY, MAY 24, 1907

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MSS. intended for publication and books, etc., intended for review should be sent to the Editor of SCIENCE, Garrison-on-Hudson, N. Y.

## THE AMERICAN PHILOSOPHICAL SOCIETY

THE annual meetings of the American Philosophical Society, which this year were held April 18 to 20, have now become a permanent feature and are looked forward to by the members as an agreeable occasion for meeting colleagues from various parts of the United States and for listening to papers covering the entire range of scientific investigation. In the latter respect the sessions are unique, and it is perhaps well in these days of extreme specialization that there should be one organization which should not merely cover all the so-called natural sciences but extend its range to history, archeology and philology, as well as literature.

In all five sessions were held for the reading of papers, which left plenty of time for the full presentation of the thirty-five papers that had been announced. The session of Friday morning was rendered particularly interesting by the presence of the Honorable James Bryce, the British Ambassador, who was formally presented to the members and made a happy address. After the luncheon on Friday, Mr. Bryce presented the gold medal of the Royal Astronomical Society to Professor Ernest W. Brown, in recognition of his important contributions to the problems relative to the motions of the moon.

The sessions were, as far as possible, so arranged as to place papers of the same class together. In accordance with this plan, the papers for Thursday afternoon and part of Friday morning were chiefly

philological and historical, those for the rest of Friday botanical, chemical and engineering. Saturday morning was devoted largely to geology, and Saturday afternoon to astronomy, while the papers covering other branches were sandwiched in, as it was found convenient, amid the general broad subjects. It is not possible within the scope of a general account to do more than say a few words about a limited number of the papers read.

Among the papers read at the first session, on Thursday afternoon, was one by Professor W. A. Lamberton on the Greek phrase of the New Testament ordinarily translated 'walking on the sea,' but which Professor Lamberton held, on the basis of an elaborate investigation of the text, should be rendered 'walking at the sea.' The speaker claimed that in the narrative of John, Jesus is not represented as either entering the ship or walking on the sea, but rather on the shore close to the water-edge.

Mr. Rosengarten's paper on the early French members of the American Philosophical Society included an account of the many Frenchmen who at the end of the eighteenth century and in the beginning of the nineteenth century came to this country and became associated in the work of the society. Buffon was the first Frenchman to be elected a member of the society, in 1768.

Professor A. Marshall Elliott, of the Johns Hopkins University, presented a paper of great interest on the origin of the word chauvinism, in which, among other things, he pointed out that the attempt to trace this word to a real character rested upon the slenderest foundations.

Professor Jastrow's paper on the liver as the seat of the soul was an investigation of various views held by the ancients regarding the organ associated with the soul. The paper showed that while the generally

prevailing view of antiquity placed the soul in the heart and subsequently in the brain, there were traces of an earlier belief which assigned to the liver the distinction of being the seat of the soul.

Professor Paul Haupt, of the Johns Hopkins University, read a paper on Jonah's whale which was devoted to showing the kind of animal that the narrator of the Book of Job had in mind. The important feature of Professor Haupt's paper was the determination of the fact that whales were known to the ancient Assyrians and are referred to in inscriptions as early as the twelfth century before this era.

Professor Lewis M. Haupt, of Philadelphia, presented an important communication on the transportation crisis, in which, after a survey of the earlier methods of transportation in this country, he urged the importance of water highways as the remedy for the rapidly increasing difficulties of transportation by railroads.

Dr. Henry Kraemer gave an outline of a continuation of the interesting studies in producing and modifying the color in plants by treating them with certain chemicals.

Dr. Howard Crosby Butler gave an interesting account of the Princeton expedition to Syria in 1904-5 which did important work in surveying, in the study of architecture, and added considerably to our knowledge of the inscriptions and other archeological material in a comparatively little known portion of Syria.

The paper by Professor Titchener, of Cornell, in collaboration with W. H. Pyle, of Cornell, on the influence of imperceptible shadows on the judgment of distances demonstrated that the current view that optical illusions in estimating distances by the eye persist even when the lines that produce the illusion are so weak as to be imperceptible is not in accordance with the

facts. The conclusion was, therefore, drawn that the subconscious need not be taken into account in the psychological explanation of optical illusions.

Professor William F. Magie, of Princeton, in a paper on the association theory of solutions, expressed the view that the heat capacity of electrolytic solutions and the volumes of solutions can be satisfactorily represented by a formula constructed on the hypothesis that each undissociated molecule of the solution associates with itself a group of water molecules. The heat capacity of the solution is additive of the heat capacities of these groups and of the water lying outside of them.

Dr. T. J. See, of Mare Island, California, supplemented his former paper on the theory of earthquakes which is published in the *Proceedings* of the American Philosophical Society, for 1906, by the further examination of the temperature and secular cooling of the earth, in which he showed that the effects of contraction are nearly insensible. The necessity of therefore abandoning old theories becomes more patent. It is interesting to note that four great writers of antiquity—Plato, Aristotle, Strabo and Pliny—attribute earthquakes to the agitation of elastic vapors in the earth, a confirmation of his own theory to which Dr. See attaches considerable importance.

Dr. Elihu Thompson, of Swampscott, Mass., in his paper on the progress of the Isthmian Canal, gave, on the whole, a favorable account of the condition of the work. The organization was pronounced to be admirable, and this, taken together with the successful work of sanitation under the charge of Colonel Gorgas, gives every reason to believe that the canal will be finished in from eight to ten years.

Among the geological papers, that of Professor William B. Scott, of Princeton,

giving illustrations of the restoration of the Santa Cruz mammals, was the most striking. Two other members of the geological department of Princeton, Messrs. Sinclair and Farr, were represented by papers, all touching on the results of the Santa Cruz expedition of Princeton University.

Another paper of general interest, that by Bailey Willis on continental development, was devoted to a discussion of the various hypotheses to account for the circumstance that each of the two great continents is composed of distinct masses which have tended to stand high in relation to their surroundings.

Professor Eric Doolittle's paper was on two remarkable stars. One, discovered in 1882 by Hough, was for a time in danger of being rejected, until in 1899 it was independently rediscovered by See. The motion of this double star during the past two years has been so rapid that already a fairly good orbit can be computed. The second pair is made up of two very faint stars more than three and one half seconds apart, a remarkable circumstance, for of all the double pairs there are none at once as faint and wide as this pair, except those which are connected with very bright stars.

The session on Thursday evening was of a popular character, being held in Witherspoon Hall and devoted to South Africa. The subject was divided between Professor William B. Scott, of Princeton, and Professor E. W. Brown, of Haverford. The former spoke about the geology and geography of South Africa, and the latter about the scenery and people. Both lectures were illustrated by stereopticon views. On the conclusion of the lectures, a reception was held by the president and council.

At the close of the Saturday morning session, balloting for new members was

taken up, which resulted in the election of twelve persons resident in the United States—George Ferdinand Becker, Ph.D., Washington; Charles Benedict Davenport, Ph.D., Cold Spring Harbor, L. I.; J. P. Croser Griffith, M.D., Philadelphia; Frank Austin Gooch, Ph.D., New Haven; Herbert Spencer Jennings, Ph.D., Baltimore; James Playfair McMurrich, Ann Arbor, Mich.; Edward Laurens Mark, Ph.D., LL.D., Cambridge, Mass.; John Bassett Moore, LL.D., New York; Francis Eugene Nipher, St. Louis; Horace Clark Richards, Ph.D., Philadelphia; John C. Rolfe, Ph.D., Philadelphia; and Allen J. Smith, M.D., Philadelphia—and five foreigners—Baron d'Estournelles de Constant, Paris; George Carey Foster, F.R.S., D.Sc., LL.D., Rickmansworth, Herts, England; J. J. Jusserand, Washington; Sir William Turner, K.C.B., D.Sc., D.C.L., F.R.S.; and John C. Kapteyn, Gröningen, Holland.

On Saturday evening the sessions were closed with a banquet at the Bellevue-Stratford, attended by about a hundred members of the society. Professor Albert H. Smyth, of the Central High School, the sad news of whose sudden death has just been announced, acted as toastmaster and presented, among others, the following speakers: Judge Sulzberger, who responded to the toast, 'The Memory of Franklin'; Professor John W. Rhys, of Oxford, who spoke on 'Sister Societies'; and the Honorable Charlemagne Tower, who made an interesting address on 'The Aims and Purposes of the Society.'

All the scientific sessions were well attended, and the society has every reason to feel gratified at the interest shown by members in coming, many of them from a very great distance, to read or to listen to papers.

The following is a list of the papers read:

#### THURSDAY, APRIL 18

*Retardation in Mental and Moral Development—A Problem of Public Education:* Dr. LIGHTNER WITMER, of Philadelphia.

*Analogies between the Colonization of Ireland and of Virginia:* Professor EDWARD P. CHEYNEY, of Philadelphia.

*Elizabethan and Jacobian College Dramas:* Professor FELIX E. SCHELLING, of Philadelphia.

*The Narratives of the 'Walking on the Sea':* Professor WILLIAM A. LAMBERTON, of Philadelphia.

*Early French Members of the American Philosophical Society:* Dr. J. G. ROSENGARTEN, of Philadelphia.

*The Influence of Imperceptible Shadows on the Judgment of Distance:* Professor EDWARD B. TITCHENER and W. H. PYLE, of Ithaca.

*Chauvin (Charvinism-Calvin, Cauvin): Truth and Fiction in the Story of its Origin:* Professor A. MARSHALL ELLIOTT, of Baltimore.

#### FRIDAY, APRIL 19

*Provisional Report of the Investigation of Foreign and Domestic Stage Micrometers:* Dr. MARSHALL D. EWELL, of Chicago.

*The Liver as the Seat of the Soul:* Professor MORRIS JASTROW, JR., of Philadelphia.

*On Jonah's Whale:* Professor PAUL HAUPT, of Baltimore.

*Charts Illustrating the Taxonomic Relations of the Monocotyledonous and Dicotyledonous Plant Families:* Professor JOHN W. HARSHBERGER, of Philadelphia.

*Some Experiments with Plant Nutrients:* Professor HENRY KRAEMER, of Philadelphia.

*The Bacteriology of Flax Retting:* GEORGE T. MOORE, Ph.D., of West Chester, Pa.

*Note as to the Measurement of the Action of Water upon Zinc and Lead:* DR. WILLIAM PITT MASON, of Troy, N. Y.

*New Results in Electro-Analysis:* DR. EDGAR F. SMITH, of Philadelphia.

*The Production of Synthetic Alcohol:* DR. HARVEY W. WILEY and HERMAN SCHREIBER, of Washington, D. C.

*The Progress of the Isthmian Canal:* DR. ELIHU THOMSON, of Swampscott, Mass.

*On the Transportation Crisis:* Professor LEWIS M. HAUPT, of Philadelphia.

*The Princeton Archeological Expedition to Syria:* HOWARD CROSBY BUTLER, of Princeton. (Lantern illustrations.)

*The Association Theory of Solutions:* Professor WILLIAM F. MAGIE, of Princeton.

*The Groups which are Generated by Two Operators of Order Two and Four respectively, where Commutator is of Order Two:* Professor G. A. MILLER, of Urbana, Ill.

#### SATURDAY, APRIL 20

*Santa Cruz Typhotheria:* W. J. SINCLAIR, of Princeton. (Lantern illustrations.)

*Santa Cruz Birds:* MARCUS S. FARR, of Princeton.

*Restorations of Santa Cruz Mammals:* Professor WILLIAM B. SCOTT, of Princeton.

*On the Temperature, Secular Cooling and Contraction of the Earth, and on the Theory of Earthquakes held by the Ancients:* DR. T. J. J. SEE, of the U. S. Naval Observatory, Mare Island, California.

*On Continental Development:* BAILEY WILLIS, M.E., of Washington.

*A Study of the Mean Temperatures of the Surface of the Moon, Earth and other Planets:* Professor CLEVELAND ABBE, of Washington.

*The Solar Corona:* W. W. CAMPBELL, of Lick Observatory, California. (Illustrated.)

*Astronomical Photography:* Professor E. E. BARNARD, of Yerkes Observatory, Williams Bay, Wis.

*Conservative Systems with Prescribed Trajectories:* Professor E. O. LOVETT, of Princeton.

*Comparison of Results of Observations at the Flower Observatory for the Years 1905 and 1906, with the Wharton Reflex Zenith Tube and the Zenith Telescope:* Professor C. L. DOOLITTLE, of Upper Darby, Pa.

*Comparison of Results of Latitude Observations at the Sayre Observatory, South Bethlehem, and at the Flower Observatory, Philadelphia, from September 30, 1904, to September 3, 1906:* J. H. OGBURN, of Bethlehem, Pa.

*Two Remarkable Double Stars: (a) the short period Binary, Hough 212, and (b) the Stellar System Krueger 60:* ERIC DOOLITTLE, of Upper Darby, Pa.

#### THE SOCIETY OF AMERICAN BACTERIOLOGISTS

THE eighth annual meeting of the Society of American Bacteriologists was held in New York during Convocation Week. The meetings were held at the College of Physicians and Surgeons, and at the Rockefeller Institute, the latter in conjunction with Section K of the American Association for the Advancement of Science.

The first session of the society was held on Thursday morning, December 27, in the main lecture room of the College of Phy-